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(21) International Application Number: PCT/US99/12680 (22) International Filing Date: 4 June 1999 (04.06.99) (30) Priority Data: 09/092,705 5 June 1998 (05.06.98) US <i>05 Dec 99 63054</i> (71) Applicant (for all designated States except US): THE OHIO STATE RESEARCH FOUNDATION [US/US]; 1960 Kenny Road, Columbus, OH 43210-1063 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): BISARO, David [US/US]; 5818 Shannon Place Lane, Dublin, OH 43016 (US). (74) Agent: DOCHERTY, Pamela, A.; Calfee, Halter & Griswold LLP, 1400 McDonald Investment Center, 800 Superior Avenue, Cleveland, OH 44114 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: MUTANT FORMS OF THE AL2 GENE OF GEMINIVIRUSES ✓ (57) Abstract <p>Isolated double domain mutant AL2 genes of a geminivirus are provided. The double domain AL2 mutant gene comprises at least one mutation in the 3' region of the AL2 gene, i.e., the region which encodes about 30 amino acids extending from about amino acid 100 to about amino acid 129 of the wild-type AL2 gene product and at least one mutation in the central region of the AL2 gene, i.e., the region which encodes about 20 amino acids extending from about amino acid 23 to about amino acid 43 of the wild-type AL2 gene product. Isolated single domain mutant AL2 genes of a geminivirus are also provided. The single domain mutant AL2 gene comprises at least one mutation in the 3' region of the AL2 gene, the region which encodes about 30 amino acids extending from about amino acid 100 to about amino acid 129 of the wild-type AL2 gene product. The present invention also relates to vectors comprising a double domain mutant AL2 gene and to vectors comprising a single domain mutant AL2 gene. The present invention also relates to transgenic plants comprising a double domain mutant AL2 gene and to transgenic plants comprising a single domain mutant AL2 gene.</p>		